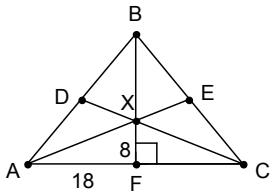
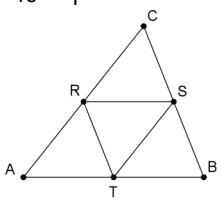
Geometry Term 4 Final Exam Review Name_____

1. Given D, E and F are all midpoints, find the value of x.



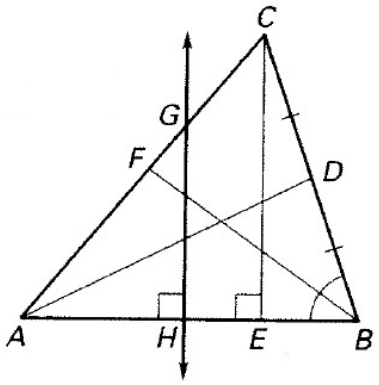
A. $x = 8$ B. $x = 16$
C. $x = 24$ D. $x = 18$

2. Given *R, S,* and *T* are midpoints, which of the following is **false**?



A. $\overline{RS} \parallel \overline{AT}$ B. If $ST = 9$, then $2 \cdot AC = 18$.
C. $\frac{1}{2} \cdot AB = RS$ D. $\Delta STR \cong \Delta ART$

3. For questions a-e, use the diagram at right.



a. Identify a median of ΔABC.
A. $\overline{BF}$ B. $\overline{GH}$
C. $\overline{AD}$ D. $\overline{CE}$
E. None of the above

b. Identify an altitude of ΔABC.
A. $\overline{CE}$ B. $\overline{GH}$
C. $\overline{BF}$ D. $\overline{CB}$
E. $\overline{AD}$

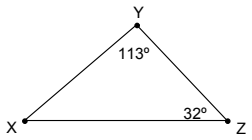
c. In ΔABC, if $m\angle ABF = 39°$ and $\overline{BF}$ is an angle bisector, then find $m\angle BCE$.
A. 90° B. 45°
C. 39° D. 51°
E. 12°

d. If $\overleftrightarrow{GH}$ is a perpendicular bisector of $\overline{AB}$ with $BH = 14, GH = 17$, then AG is
A. 9.64 B. 14
C. 17 D. 22.02
E. 31

e. Which of the following statements is **false**?
I. Medians intersect inside a triangle to form the centroid point of concurrency.
II. Medians are divided into thirds, where two of the thirds are from the vertex to the centroid and one of the thirds is from the centroid to the side.
III. The centroid is the point at which the triangle can be balanced
IV. A triangle's median connects a vertex to the midpoint of the opposite side.
A. I B. II
C. III D. IV
E. All true F. All false

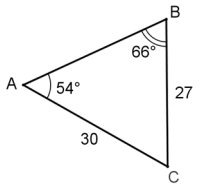
4. A triangle with two side lengths of 9 and 17 is to be constructed. Which of the following is **not** a possible length of the third side of the triangle? Choose **all** that apply.
A. 8 B. 9 C. 15
D. 17 E. 26 F. All of the choices are possible lengths

5. Arrange the sides of ΔABC in order of length from **largest to smallest.**



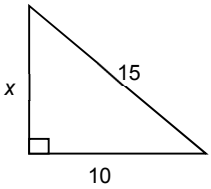
A. $\overline{XY}, \overline{YZ}, \overline{XZ}$ B. $\overline{YZ}, \overline{XZ}, \overline{XY}$ C. $\overline{XZ}, \overline{YZ}, \overline{XY}$
D. $\overline{XY}, \overline{XZ}, \overline{YZ}$ E. $\overline{YZ}, \overline{XY}, \overline{XZ},$ F. $\overline{XZ}, \overline{XY}, \overline{YZ}$

6. Write an inequality that best describes the possible lengths for $\overline{AB}$.



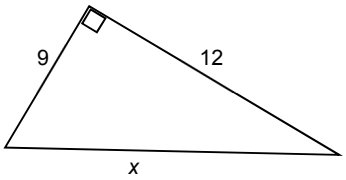
A. $3 < AB < 57$ B. $3 < AB < 27$
C. $30 < AB < 57$ D. $27 < AB < 30$

7. Determine the value of x.



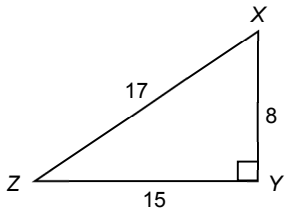
A. 5 B. $5\sqrt{5}$
C. 10 D. $10\sqrt{3}$

8. Determine the value of x.



A. 8 B. 15
C. 18 D. 21

9. Find the tangent of angle X. Round your answer to four decimal places.

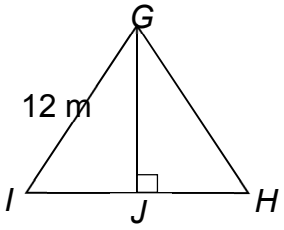


A. 0.5333 B. 0.8823
C. 1.1333 D. 1.8750

10. A rectangular yard is 50 feet wide by 120 feet long. How far is it diagonally from one corner to the opposite corner?

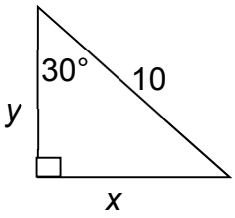
A. 65 ft. B. 85 ft.
C. 130 ft. D. 170 ft.

11. ΔGHI is equilateral with sides measuring 12 m. Determine GJ.



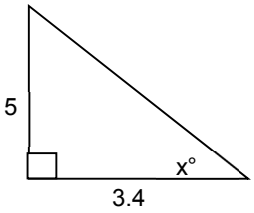
A. $6\ m$ B. $6\sqrt{3}\ m$
C. $12\ m$ D. $12\sqrt{3}\ m$

12. Find the value of x and y.



A. $x = 5, y = 5\sqrt{3}$ B. $x = 5\sqrt{3}, y = 5$
C. $x = 5, y = 5\sqrt{2}$ D. $x = 5\sqrt{2}, y = 5$

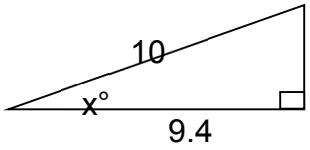
13. Find the value of x.



A. 34° B. 48°
C. 56° D. 90°

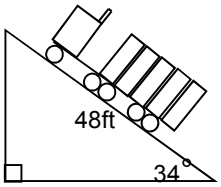
14. Find the value of *x*

A. 19.95° B. 43.23°
C. 70.05° D. 46.77°



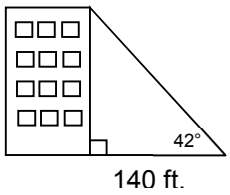
15. How high is the end of a 48-foot ramp when it is positioned at an angle of 34° to unload a truck?

A. 24.0 ft. B. 26.8 ft.
C. 32.0 ft. D. 39.8 ft.



16. To measure the height of a building you stand 140 feet from its base and measure the angle of elevation to be 42°. What is the building's height?

A. 93 ft. B. 104 ft.
C. 126 ft. D. 155 ft.



17. Which statement is true when using segments of length 5, 8, and 10 to form a triangle?

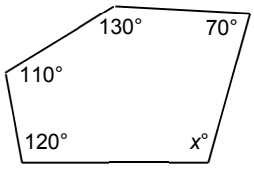
A. The segments form an acute triangle.
B. The segments form an obtuse triangle.
C. The segments form a right triangle.
D. The segments do not form a triangle.

18. The perimeter of a square is 64 cm. Find the length of a diagonal.

A. 8 cm B. $8\sqrt{2}$ cm
C. 16 cm D. $16\sqrt{2}$ cm

19. Find the value of *x*.

A. 100 B. 110
C. 120 D. 130



20. The sum of the interior angles of a convex hexagon is

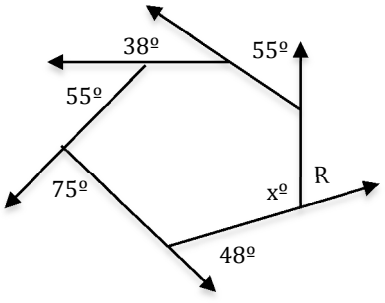
A. 180° B. 360°
C. 720° D. 1080°

21. The sum of the exterior angles of a regular octagon is

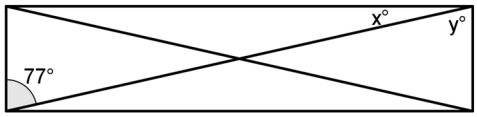
A. 180° B. 360°
C. 1080° D. 1440°

22. Determine the measure of the interior angle at vertex R.

A. 89° B. 91°
C. 109° D. 111°

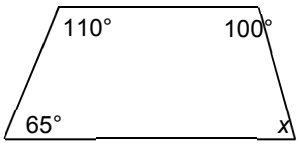


23. Solve for x and y in the rectangle.



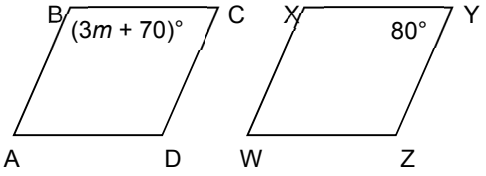
A. $x = 77, y = 77$ B. $x = 13, y = 77$
C. $x = 77, y = 13$ D. $x = 13, y = 13$

24. Solve for x.



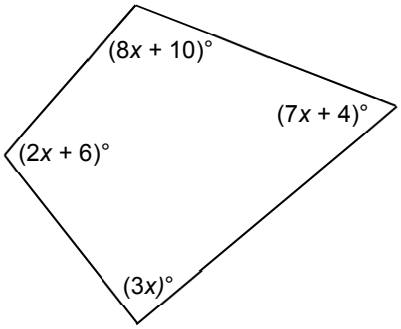
A. $65°$ B. $85°$
C. $110°$ D. $115°$

25. Parallelogram $ABCD \cong$ Parallelogram $WXYZ$. Solve for m.



A. $m = 3.3$ B. $m = 8$
C. $m = 8.5$ D. $m = 10$

26. Find the value of x.



A. 8 B. 9
C. 17 D. 19

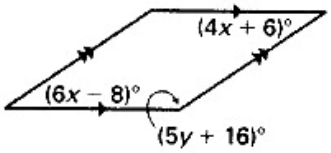
27. A square with a side length of 5 has one vertex at (2, 0). Which of the following points ***cannot*** be a vertex of the square?

A. $(7, 0)$ B. $(-3, 0)$
C. $(-3, -5)$ D. $(0, 7)$
E. $(7, -5)$

28. What special type of quadrilateral has the vertices $F(-6, -2)$, $G(1, -2)$, $H(-6, -5)$, and $I(1, -5)$?

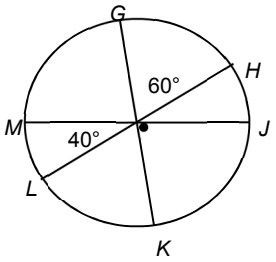
A. Rectangle B. Parallelogram
C. Rhombus D. Kite
E. Square

29. What are the values of the variables in quadrilateral *MNOP*?



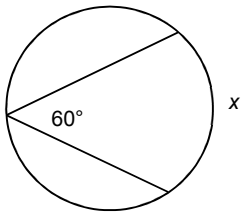
A. $x = 4, y = 19$ B. $x = 3, y = 32$
C. $x = 5, y = 27$ D. $x = 7, y = 26$

30. Find the measure of arc MHK



A. $100°$ B. $180°$
C. $220°$ D. $260°$

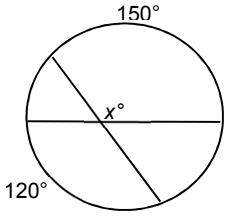
31. Find the value of *x*.



A. $30°$ B. $60°$
C. $90°$ D. $120°$

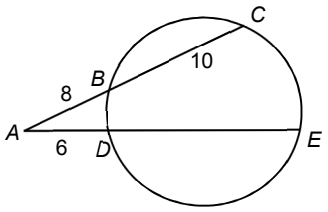
32. Find the value of x.

A. 120 B. 135
C. 150 D. 270



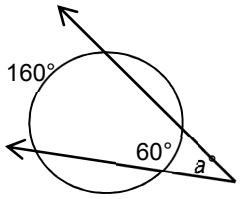
33. Find the value of DE.

A. 18 B. 13.3
C. 8 D. 7.5



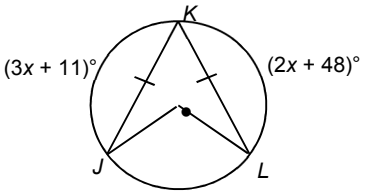
34. Find the value of a.

A. 30 B. 50
C. 80 D. 100



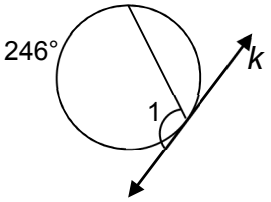
35. Find the measure of arc JL.

A. 37° B. 116°
C. 122° D. 244°



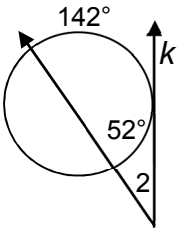
36. Line k is tangent to the circle. Find m$\angle 1$.

A. 246° B. 123°
C. 114° D. 67°



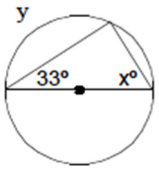
37. Line k is tangent to the circle. Find m$\angle 2$.

A. 45° B. 26°
C. 166° D. 38°



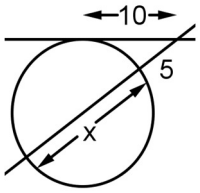
38. Find x and y given the diameter of the circle.

A. $x = 33, y = 66°$ B. $x = 33, y = 33°$
C. $x = 57, y = 114°$ D. $x = 57, y = 57°$



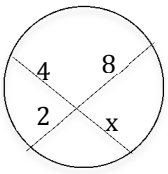
39. Find the value of segment x if a tangent and a secant intersect the circle as shown.

A. 2 B. 15
C. 20 D. 12



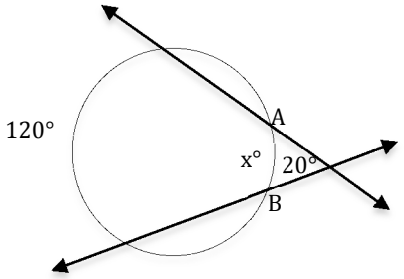
40. Find the value of x.

A. 4 B. 5
C. 6 D. 10



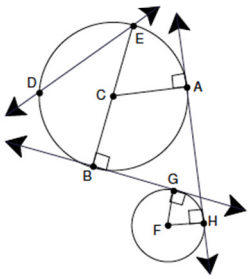
41. Find the measure of arc AB.

A. 20° B. 40°
C. 80° D. 160°



42. Using the image at the right, determine which of the following is **true**.

A. $\angle BCA$ is an inscribed angle.
B. $\overline{AB}$ is an arc.
C. $\overleftrightarrow{DE}$ is a chord.
D. $\overleftrightarrow{AH}$ is a tangent.



43. The radius of a circle is 23 mm. Find the circumference of the circle.

A. 46 mm B. 72.3 mm
C. 144.5 mm D. 1661.9 mm

44. Find the radius of a circle with circumference 20π cm.

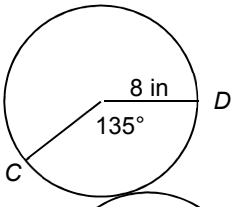
A. 10 cm B. 5π cm
C. 20 cm D. 10π cm

45. If an arc measures 45° with a diameter of 20 m, then what is its arc length?

A. $2.5\pi\ m$ B. $5\pi\ m$
C. $15\pi\ m$ D. $17.5\pi\ m$

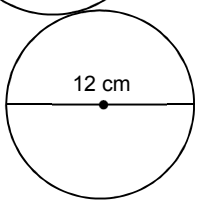
46. Find the length of arc CD.

A. $3\pi\ in$ B. $6\pi\ in$
C. $12\pi\ in$ D. $16\pi\ in$



47. Find the area of the circle.

A. $6\pi\ cm^2$ B. $12\pi\ cm^2$
C. $36\pi\ cm^2$ D. $144\pi\ cm^2$

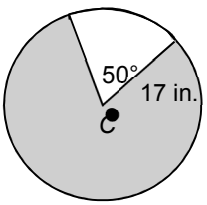


48. Find the radius of a circle with area 81π square feet.

A. 9π ft. B. 18 ft.
C. 3π ft. D. 9 ft.

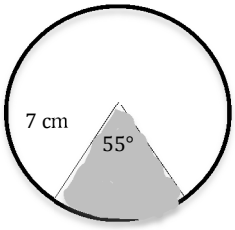
49. Find the area of the **<u>shaded</u>** region.

A. 92 in^2 B. 126 in^2
C. 782 in^2 D. 908 in^2

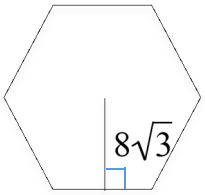


50. Find the area of the **<u>shaded</u>** region.

A. 7 cm^2 B. 24 cm^2
C. 288 cm^2 D. 1008 cm^2

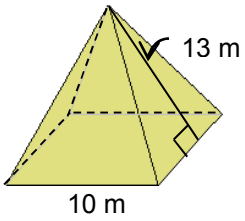


51. Find the area of the regular polygon.



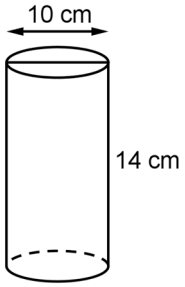
A. 83 square units B. 333 square units
C. 665 square units D. 1330 square units

52. Find the volume of the square pyramid.



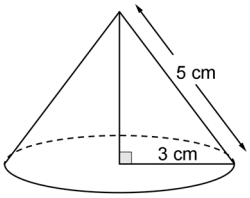
A. 280 m^3 B. 340 m^3
C. 400 m^3 D. 580 m^3

53. Find the volume of the right cylinder.



A. 4398.23 cm^3 B. 439.82 cm^3
C. 549.78 cm^3 D. 1099.56 cm^3

54. Find the volume of the cone.



A. $5\pi\ cm^3$ B. $12\pi\ cm^3$
C. $15\pi\ cm^3$ D. $36\pi\ cm^3$

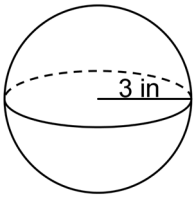
55. Find the volume of a square pyramid with a base area of 40 square inches and a height of 9 inches.

A. 120 cubic inches B. 180 cubic inches
C. 360 cubic inches D. 4800 cubic inches

56. Find the volume of a pyramid that has a square base with 5 cm sides and a height of 9 cm.

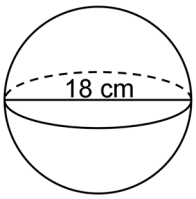
A. 15 cm^3 B. 30 cm^3
C. 50 cm^3 D. 75 cm^3

57. Find the volume of the sphere.



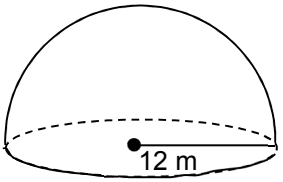
A. 28 in^3 B. 113 in^3
C. 175 in^3 D. 452 in^3

58. Find the volume of the sphere.



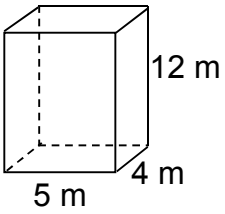
A. $324\pi\ cm^3$ B. $972\pi\ cm^3$
C. $1296\pi\ cm^3$ D. $7776\pi\ cm^3$

59. Find the volume of the hemisphere.



A. 2304 cubic meters B. 3618 cubic meters
C. 5426 cubic meters D. 7235 cubic meters

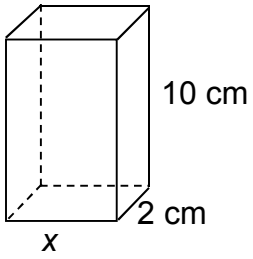
60. Find the volume.



A. 240 m^3
B. 120 m^3
C. 20 m^3
D. 48 m^3

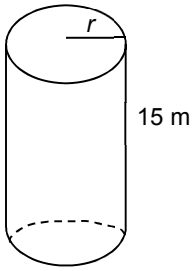
61. The volume of the right prism is 160 cm^3. Find the value of x.

A. 8 cm B. 16 cm
C. 5 cm D. 4 cm



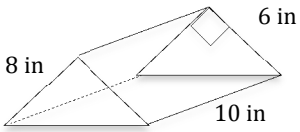
62. The volume of the cylinder is 3817 m^3. Find the radius r.

A. 254 m B. 81 m
C. 9 m D. 28 m



63. Find the volume of the solid.

A. 240 in^3 B. 280 in^3
C. 340 in^3 D. 480 in^3



64. The volume of a sphere is 500 cubic yards. What is the radius of the sphere?

A. 4.92 yd. B. 10.93 yd.
C. 10.56 yd. D. 34.32 yd.